AMENDMENT TO THE CLAIMS

Please amend the presently pending claims as follows :

1. (Currently Amended) An error correction coding method, ~~characterized in that~~comprising the steps of:

providing for at least two distinct sections of a predetermined elementary code ~~are used~~, each section associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1) according to a vector of branch labels (b_0, b_1, b_2, b_3) defining a code word, two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed;

associating said sections to define a correction code; and

generating coded data, by coding source data according to said correction code.

2. (Currently Amended) The coding method according to claim 1, ~~characterized in that~~ wherein said step of providing comprises a step of ~~the code words of said elementary code have undergone~~ partitioning the code words of said elementary code into four packets (s_0, s_1), (s_2, s_3), (b_0, b_1), (b_2, b_3) such that each code word, except the zero code word, comprises at least three lit packets out of four, wherein a packet is said to be lit when it comprises at least a bit of value 1.

3. (Currently Amended) The coding method according to claim 1, ~~characterized in that~~wherein said step of associating provides for an association in sequence of said elementary code sections ~~are associated in sequence~~, in order to form at least one coding trellis.

4. (Currently Amended) The coding method according to claim 3, ~~characterized~~ wherein~~in that said trellis(es) is(are)~~said at least one coding trellis is cyclic.

5. (Currently Amended) The coding method according to claim 3, ~~characterized in that it comprises~~wherein said step of associating provides for two trellises, wherein the source

data to be coded are entered in different orders.

6. (Currently Amended) The coding method according to claim 4, ~~characterized in that the~~wherein said step of generating comprises a step of selecting a retained coding result, ~~is~~ which is the ~~one~~ coding result ~~which~~ that has an arrival state identical with its starting state, among all the possible starting states for one of said elementary code sections, selected as started section.

7. (Currently Amended) The coding method according to claim 6, ~~characterized in that~~ wherein said step of selecting selects ~~coding result is the~~a set of information and redundancy elements delivered by said at least one trellis~~(es)~~.

8. (Currently Amended) The coding method according to claim 7, ~~characterized in that~~wherein said step of generating comprises a step of puncturing ~~is~~ applied on said elements forming the retained coding result.

9. (Currently Amended) The coding method according to claim 1, ~~characterized in that at least one of said~~comprising a step of puncturing at least one of said sections ~~is punctured~~.

10. (Currently Amended) The coding method according to claim 9, ~~characterized in that at~~wherein said step of puncturing delivers at least one left punctured section and at least one right punctured section ~~are used~~.

11. (Currently Amended) The coding method according to claim 3, ~~characterized in that~~ wherein said step of associating provides for at least two duplicated trellises ~~trellis(es) are duplicated at least once~~ in order to ~~have~~ provide at least two coding sets interconnected via permutation means.

12. (Currently Amended) The coding method according to claim 11, ~~characterized in that it~~ wherein the method comprises a step of shifting the data to be coded ~~are~~ and a step of

transmittinged the shifted data to each of said coding sets ~~with a shift~~.

13. (Currently Amended) The coding method according to claim 1, ~~characterized in that~~wherein said vectors ~~consist of~~comprise binary elements.

14. (Currently Amended) The coding method according to claim 13, ~~characterized in that~~wherein said elementary code is a Hamming [8,4,4] code.

15. (Currently Amended) The coding method according to claim 14, ~~characterized in that it~~wherein said step of providing applies the following sections:

- $H; (y_0, y_1, x_0, x_1)\ (b_0, b_1, b_2, b_3)$
- $H; (x_0, x_1, y_0, y_1)\ (b_0, b_1, b_2, b_3)$
- $H; (x_0, y_0, y_1, x_1)\ (b_0, b_1, b_2, b_3)$
- $H; (y_0, x_0, x_1, y_1)\ (b_0, b_1, b_2, b_3)$
- $H; (y_0, x_0, y_1, x_1)\ (b_0, b_1, b_2, b_3)$
- $H; (x_0, y_0, x_1, y_1)\ (b_0, b_1, b_2, b_3)$

16. (Currently Amended) The coding method according to claim 10, wherein said step of providing~~characterized in that it~~ applies the following punctured sections:

- $H^g; (*, *, x_0, x_1)\ (*, *, b_2, b_3)$
- $H^d; (x_0, x_1, *, *)\ , (b_0, b_1, *, *)$

17. (Currently Amended) The coding method according to claim 11, wherein said step of providing provides for~~characterized in that it comprises~~ three coding sets each receiving 12 coding bits via an identity permutation, a 4 bit cyclic shift permutation and a 8 bit cyclic shift permutation, respectively.

18. (Currently Amended) The coding method according to claim 17, wherein said step of providing organizes~~characterized in that~~ said coding sets ~~are organized~~ in order to produce a Golay [24,12,8] code.

19. (Currently Amended) The coding method according to claim 1, characterized wherein said step of providing provides for~~in that said~~ vectors ~~consist of~~comprising basic words which may assume 4 values.

20. (Currently Amended) The coding method according to claim 19, ~~characterized in that~~wherein said elementary code is a Nordstrom-Robinson code with parameters [8,4,6].

21. (Currently Amended) The coding method according to claim 1, wherein said step of providing provides for ~~characterized in that said~~ vectors ~~consist of~~ comprising basic words which may assume 8 values.

22. (Currently Amended) The coding method according to claim 21, ~~characterized in that~~wherein said elementary code is a M[8,4] code.

23. (Currently Amended) The coding method according to claim 1, ~~characterized~~ wherein it comprises a step ~~in that it is of the~~ "turbocodinge"~~type~~.

24. (Currently Amended) An error correcting ~~coding device~~code, ~~characterized in that it~~ comprisinges at least two coding modules corresponding to at least two distinct sections of a predetermined elementary code, associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1), according to a vector of branch labels (b_0, b_1, b_2, b_3),

two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed.

25. (Currently Amended) A method for decoding coding data comprising the steps of:

providing for at least two distinct sections of a predetermined elementary code, each section associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1) according to a vector of branch labels (b_0, b_1, b_2, b_3) defining a code word, two sections of said elementary code being distinct when the order and/or the role of the elements of said

branch label vector are changed;

associating said sections to define a correction code;

decoding coded data according to said correction code;

outputting decoded data.

~~according to the coding method according to claim 1, characterized in that at least two distinct sections of a predetermined elementary code are used, associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1) according to a vector of branch labels (b_0, b_1, b_2, b_3),~~

~~two sections of said elementary code being distinct when the order and/or the role of the elements of said branched label vector are changed.~~

26. (Currently Amended) The decoding method according to claim 25, ~~characterized in that it~~wherein said step of decoding is iterative.

27. (Currently Amended) The decoding method according to claim 26, ~~characterized in that~~wherein ~~, at every~~each iteration~~,~~ provides for a step of computing a posteriori probabilities ~~are computed~~ on metrics associated with at least one trellis defined by said elementary code sections and ~~in that~~a step of interrupting said iterations ~~are interrupted~~ when a stable result is obtained and/or after a predetermined number of iterations.

28. (Currently Amended) A ~~device~~ trellis for decoding data ~~coded by the coding method according to claim 1, characterized in that it~~ comprises~~e~~ing at least two decoding modules corresponding to at least two distinct sections of a predetermined elementary code, associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1), according to a vector of branch labels (b_0, b_1, b_2, b_3),

two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed.

29. (New) A trellis for decoding data comprising at least two coding modules corresponding to at least two distinct sections of a predetermined elementary code,

associating an arrival vector (s_2, s_3) with a starting state vector (s_0, s_1), according to a vector of branch labels (b_0, b_1, b_2, b_3),

two sections of said elementary code being distinct when the order and/or the role of the elements of said branch label vector are changed.